Small-Scale Variation in Major Meiofaunal Taxa and Sediment Chemistry in Tropical Sediments

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Abstract
Variations in sediment biochemistry and abundance of meiofauna were investigated in three tropical habitats: mangrove forest, intertidal lagoon, and subtidal reef area in eastern Africa. Both the biochemical components of the pore water and the meiofauna varied substantially over small distances in all three habitats. In the mangrove area, the color of the pore water was found to be positively correlated with the major meiofaunal taxa, especially the nematodes. In the coastal lagoon, polychaetes showed negative correlation with particulate organic matter while other groups showed no correlation with any of the chemical components analyzed. In the subtidal reef area no chemical components were found to correlate with the meiofauna. When data from the three habitats are taken together two clear associations emerge. First, grain size shows a highly significant relationship with both total fauna and nematode numbers. Second, there is clear association between the amount of particulate organic carbon and particulate organic nitrogen in the pore water.